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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,854	07/14/2003	Jerry Wang	MR3003-52	3800

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EXAMINER

HUYNH, KIM NGOC

ART UNIT PAPER NUMBER

2182

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/617,854

Applicant(s)

WANG ET AL.

Examiner

Kim Huynh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1017 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Islam et al. (US 5,950,230).

Claims 1-2, Islam discloses a disk administrating system for disk in multiple disk-arrays, comprising: a computer having an interface card 120; a plurality of disk drives (102, 111) connected to the interface card 120; wherein said plurality of disk drives constitute to be at least one disk array (RAID), each of said disk drives having an array configuration sector for storing array configuration data 105 (operating parameters) *located at said last sector thereof (col. 6, l. 62 to col. 7, l. 2)*; wherein said computer accesses said disk drives through said interface card and manage said disk array by information stored in said array configuration sector.

Claim 3-8 and 10-12, and Islam discloses the array configuration data 105 is as disclosed in Table 1 (col. 5, ll. 62-63) and comprises operating parameter information for each disk drive including an array signature field (attachment point, col. 4, ll. 48-58) to recognize if the disk drive is an array disk in the array (col. 5, ll. 43-50), the configuration data includes record status and setting of the array/disk information (col.

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6, ll. 62 to col. 7, l. 2) and including disk number field 108, stripe size field (ucStripeSize), available capacity (ulLogDrvSize), broken flag to check said integrity of the array (col. 7, ll. 3-18) and array serial number 107 (bootable field (UNIT boot), sequence/function field (ucState) and enhancement field (Rebuild Rate).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9 and 13-17 are rejected under 35 U.S.C. 103(a) as obvious over Islam in view of Talagala et al. (US 6,742,081).

Islam discloses all the limitations of claims 2 and 8 above except the disclosure of a checksum field. However, Islam discloses the operating parameters are used to keep track of bad stripes and failing sectors using a binary search algorithm (col. 13-14) and the configuration data also include field for tracking the detail of each data block in a bad stripe table in the configuration sector (col. 14, ll. 15-22) except for explicitly disclosing using checksum as the error detection scheme to calculate such errors. Talagala discloses (Fig. 6C) checksum field stored in a segment of a disk to keep track of all physical segments for guarding against errors caused by data corruptions due to bad sectors in order allow access of the checksum without incurring additional I/O overhead or increasing the size of the configuration table (col. 11, l. 41 to col. 12, l. 13).

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Since checksum is the most simple and common error detection scheme in detecting grabbed messages; it would have been obvious to one having ordinary skill in the art to provide a checksum field in the configuration table as taught by Talagala to keep track of the bad stripes and failing sectors while benefit from no increase of I/O overhead or size of the configuration table.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Galbraith et al. (US 5,537,567) discloses the benefits of relocating the disk information (parity blocks) to the last sector of the disk.

Hodges (US 5,835,694) and Humkicek et al. (US 5,822,782) discloses a RAID array where array configuration are stored on each disk of the array.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (571) 272-4147.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Kim Huynh', with a long horizontal flourish extending to the right.

Kim Huynh
Primary Examiner
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KH
4/1/05